

What is claimed is :

1. A process for treating a material by extrusion in a machine comprising at least one screw driven in rotation within an elongated sleeve and provided with helical threads which drive toward the downstream end of the machine the material introduced through an inlet orifice placed adjacent to the upstream end of the sleeve, comprising causing the material to pass through the outlet of a first treatment region into a second treatment region defined by a second sleeve, dividing said material into a plurality of independent fluxes, subjecting each flux to a particular treatment, and then conveying the independent fluxes into a third region and forming a final single product.

2. A process according to claim 1, comprising mixing the independent fluxes of the material which was prepared in said first treatment region with different colouring agents in said second region.

3. A process according to claim 1, comprising mixing the independent fluxes of the material which was prepared in the said first treatment region with different aromas in said second region.

4. A process according to claim 1, further comprising re-grouping the independent fluxes of material in said third region into a single flux in an extrusion die comprising at least one extrusion

conduit, the conditions of extrusion being so determined that the independent fluxes are applied against each other and made unitary in said extrusion conduit.

5. A process according to claim 4, wherein the extrusion conduit of the extrusion die exerts sufficient pressure on the flux of material during a given period and on a given length so that the independent fluxes adhere to each other and form a single product before expansion.

6. A process according to claim 1, comprising causing the independent fluxes of material to pass in said third region into an extrusion die comprising two concentric conduits for producing a filled product by co-extrusion.

7. A process according to claim 1 for producing a food product, wherein the food product comprises, on a transversely extending end face and along a length thereof a plurality of differently coloured regions.

8. A process according to claim 1 for producing a food product, wherein the food product comprises, on a transversely extending end face and along a length thereof, a plurality of differently aromatized regions.

9. An apparatus for producing a composite food product by extrusion, comprising a machine

including an elongated sleeve having an upstream inlet orifice and a downstream outlet orifice, a screw driven in rotation inside the elongated sleeve and provided with helical threads for driving the material introduced through the inlet orifice toward the downstream end, said apparatus further comprising a second part for treating the material and comprising a second sleeve defining separate bores for forming a plurality of independent fluxes of material, a common convergent portion, and a third part formed by an extrusion die having a central extrusion conduit of given length and section and put in communication with said separate bores through said convergent portion.

10. An apparatus for producing a composite food product by extrusion comprising a machine including an elongated sleeve having an upstream inlet orifice and a downstream end, at least two screws having parallel axes and each formed by a central driving shaft and helical threads disposed within said sleeve, the material being fed through the inlet orifice and then driven toward the downstream end of the sleeve by the rotation of the screws, said apparatus further comprising a second part for treating the material and comprising a second sleeve defining separate bores for forming a plurality of independent fluxes of material centered on axes of the screws, said screws

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being each extended inside the corresponding bore by a downstream portion acting as a mono-screw and provided with threads, and each of said bores of the second part opening into a third part formed by an extrusion die.

11. An apparatus according to claim 9, wherein the separate bores are provided with orifices for the introduction of different colouring agents and/or aromas in the fluxes of material.

12. An apparatus according to claim 10, wherein the separate bores are provided with orifices for the introduction of different colouring agents and/or aromas in the fluxes of material.

13. An apparatus according to claim 10, wherein each of the separate bores of the second part open into the extrusion die of the third part through a convergent portion.

14. An apparatus according to claim 10, wherein the extrusion die of the third part is provided with symmetrical distribution passageways, each of which is placed in front of one of the convergent portions which converge toward a common extrusion conduit of given length and section.

15. An apparatus according to claim 14, wherein the distribution passageways are divided into distribution sub-passageways which are convergent in pairs toward an extrusion conduit.

